PATROL® Knowledge Module for Microsoft Windows Active Directory Getting Started

Version 1.5

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◀bmcsoftware

Contacting BMC Software

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Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that Customer Support can begin working on your problem immediately:

- product information

  — product name
  — product version (release number)
  — license number and password (trial or permanent)

- operating system and environment information

  — machine type
  — operating system type, version, and service pack or other maintenance level such as PUT or PTF
  — system hardware configuration
  — serial numbers
  — related software (database, application, and communication) including type, version, and service pack or maintenance level

- sequence of events leading to the problem

- commands and options that you used

- messages received (and the time and date that you received them)

  — product error messages
  — messages from the operating system, such as `file system full`
  — messages from related software

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Product Components and Capabilities

This chapter provides a brief overview of the PATROL Knowledge Module for Microsoft Windows Active Directory product.

The following topics are discussed in this chapter:

Features

The PATROL Knowledge Module for Microsoft Windows Active Directory product, also known as PATROL KM for Active Directory, lets you monitor and analyze your Microsoft Windows 2000 Active Directory environments. Whether you choose to monitor and analyze one environment or many, PATROL KM for Active Directory helps you

- detect and notify you if Microsoft Windows 2000 Active Directory generates errors or performs slowly
- monitor performance of system resources
- plan for capacity and availability
- monitor all domain controllers within a site
- monitor all domain controllers between sites within a single domain
- anticipate and eliminate problems before they become apparent to users of the monitored Microsoft Windows 2000 Active Directory environments

For a brief description of product features, see the sections that follow. For more detailed information about how to use the product and complete descriptions of the application classes and parameters, see the product online Help. For a full list of all parameters and their default settings, consult the *PATROL Parameter Reference Manual*, which is included on the documentation CD that came with this product.

For information on basic functions of the PATROL Agent and consoles, refer to the PATROL Agent Reference guide and the release notes for the PATROL consoles.

This guide is not intended as a reference for the Microsoft Windows 2000 Active Directory product. Refer to your Microsoft Windows 2000 Active Directory documentation for further information about setting up Microsoft Windows 2000 Active Directory.

Active Directory Monitoring

PATROL KM for Active Directory monitors the performance of *managed systems* in a Microsoft Windows 2000 Active Directory environment. This section defines a managed system and identifies the environmental elements that PATROL KM for Active Directory monitors.

Managed Systems

A PATROL KM for Active Directory managed system is a Windows 2000 domain controller onto which PATROL KM for Active Directory has been installed.

A managed system provides a view of its Microsoft Windows 2000 Active Directory environment. Each managed system is responsible for monitoring Microsoft Windows 2000 Active Directory's key indicators that are required to ensure and maintain the consistency of the Directory data and the desired level of service throughout the Microsoft Windows 2000 Active Directory forest.

Each PATROL KM for Active Directory managed system uses the application classes shown in "Application Classes" on page 3-12. For additional information about these application classes, refer to the PATROL KM for Active Directory online Help.

Replication Monitoring

PATROL KM for Active Directory monitors the Microsoft Windows 2000 Active Directory replication for errors and latency (to verify that replication occurs within a reasonable time), both within a site (intrasite) and between sites (intersite).

Directory replication is monitored at each managed system (domain controller). This functionality includes monitoring basic replication by creating synthetic transactions and verifying the replication of those transactions.

Intrasite Monitoring

PATROL KM for Active Directory monitors the replication status of the domain controller upon which it is installed. It determines whether updates from each domain controller within the site have been replicated successfully and in a timely manner.

Intersite Monitoring

Intersite replication monitoring verifies that Microsoft Active Directory updates are successfully distributed between sites. Each bridgehead server in a site is checked to determine if Microsoft Active Directory updates from other sites have been successfully replicated to the bridgehead server. The intersite replication interval is automatically determined at each collection; it requires no configuration. However, if desired, you can override the automatic replication interval determination, on a site-by-site basis, by configuring the configuration database (**pconfig**) variable, **/ActiveDirectory/Configuration/**<*site*>**/IntersiteReplicationSchedule**. See the online Help for more information.

FSMO Monitoring

Microsoft Windows 2000 Active Directory (also referred to as Active Directory) supports multi master replication of the Directory data among all domain controllers in the domain. This allows certain domain configuration changes to be made at any domain controller in the domain and automatically propagated to each of the domain controllers in the domain.

Some domain configuration changes can only be made from domain controllers identified as the *operations masters.* The operations masters play various roles. The roles of the operations masters can be moved between controllers within the domain, and are thus referred to as *flexible single master operations* (FSMO). The five FSMO roles are shown in Table 1-1..

Table 1-1   FSMO Roles and Scopes

Role	Scope
schema master	forest
domain naming master	forest
relative ID master	domain
Primary Domain Controller (PDC) emulator	domain
infrastructure master	domain

The PATROL KM for Active Directory product monitors the availability of the forest-wide and domain-wide FSMO roles.

LDAP Monitoring

PATROL KM for Active Directory monitors LDAP locally at each monitored system for

- connection availability
- response time

SAM Monitoring

PATROL KM for Active Directory monitors the Security Account Manager (SAM). SAM provides legacy NT authentication support. SAM monitoring is inactive by default. To activate SAM monitoring, refer to "Activating Parameters" on page 3-11.

Address Book Monitoring

PATROL KM for Active Directory monitors the performance of Address Book requests made against the Microsoft Windows 2000 Active Directory server.

Event Monitoring

To measure the overall health of the domain controllers, PATROL KM for Active Directory configures the PATROL KM for Microsoft Windows Servers 3.8.00 to monitor various events pertaining to

- DNS Name Registration
- Core Active Directory Service
- File Replication Service and Group Policy
- Time Synchronization Service
- Kerberos
- Netlogon

Refer to "Configuring Windows Event Log Monitoring" on page 3-10 for additional information.

DNS Name Registration

To identify failures with the DNS name registration, PATROL KM for Active Directory configures PATROL for Microsoft Windows Servers 3.8.00 to obtain event information, as shown in Table 1-2.

Table 1-2   Monitored Events - DNS Name Registration

Event Log	Source	Event	Significance
System	DNSAPI	11154, 11166	domain controller does not have rights to perform a secure dynamic update.
System	DNSAPI	11150, 11162	DNS server timed out
System	DNSAPI	11152, 11153, 11164, 11165	Zone or currently-connected DNS server does not support dynamic update.

Table 1-2   Monitored Events - DNS Name Registration

Event Log	Source	Event	Significance
System	DNSAPI	11151,11155, 11163, 11167	A resource record for the domain controller is not registered in DNS.
System	NETLOGON	57773	DNS locator record is not registered because the primary DNS server does not support dynamic update.
System	NETLOGON	57774	A domain controller locator record is not registered in DNS.

Core Active Directory Service

To identify failures with the core Active Directory service, PATROL KM for Active Directory configures PATROL KM for Microsoft Windows Servers 3.8.00 to obtain event information, as shown in Table 1-3.

Table 1-3   Core Active Directory Service Monitored Events

Event Log	Source	Event	Significance
Directory Service	all sources	Severity = error	primary error events for Active Directory
System	LSASS	Severity = error	Local security authority is the core security subsystem for Active Directory.

File Replication Service and Group Policy

To identify failures with the file replication service and group policy, PATROL KM for Active Directory configures PATROL KM for Microsoft Windows Servers 3.8.00 to obtain event information, as shown in Table 1-4.

Table 1-4   File Replication Service/Group Policy Monitored Events

Event Log	Source	Event	Significance
FRS	all sources	Severity = error	synchronizes policy between all domain controllers in the forest
Application	USERENV	Severity = error User = System	applies group policy and profiles on domain controllers
Application	SCECLI	Severity = error	Security Configuration Engine error messages

Time Synchronization Service

To identify events that may indicate problems maintaining uniform time throughout the Active Directory forest, PATROL KM for Active Directory monitors the events shown in Table 1-5.

Table 1-5   Time Synchronization Service Monitored Events

Event Log	Source	Event	Significance
System	W32TIME	Severity = error Severity = warning	problem maintaining uniform time throughout the Microsoft Windows 2000 Active Directory forest

Kerberos

To identify events that many indicate problems with Kerberos, the default authentication protocol, PATROL KM for Active Directory monitors the events shown in Table 1-6.

Table 1-6   Kerberos Monitored Events

Event Log	Source	Event	Significance
System	KDC	Severity = error	critical Kerberos Distribution Center service error messages

Net Logon

To identify events that may indicate problems with Net Logon service and protocol, which is required for proper domain controller functionality, PATROL KM for Active Directory monitors the events shown in Table 1-7.

Table 1-7   Netlogon Monitored Events

Event Log	Source	Event	Significance
System	NETLOGON	Severity = error 5705, 5723	critical NETLOGON service errors

Reporting

PATROL KM for Active Directory generates an Active Directory Operations report, which provides information about Active Directory with respect to the local domain controller, including information about the

- server
- site
- Microsoft Windows 2000 Active Directory configuration
- Microsoft Windows 2000 Active Directory FSMO role holder
- Microsoft Windows 2000 Active Directory lost and found objects

Related Documentation

For additional information about PATROL KM for Active Directory, see your online Help and release notes. For information about the PATROL KM for Active Directory parameters, see the *PATROL Parameter Reference Manual*. For additional information about PATROL, see the following documentation:

- Help for your PATROL Console
- *PATROL Console Server User Guide*
- PATROL user guides
- PATROL getting started guides
- *PATROL Central Operator - Web Edition Getting Started*
- *PATROL Central Operator - Microsoft Windows Edition Getting Started*

To view the complete PATROL documentation library, visit the support page on the BMC Software Web site at **http://www.bmc.com/support.html**. Log on and select a product to access the related documentation. To log on if you are a first-time user and have purchased a product, you can request a permanent user name and password by registering at the Customer Support page. To log on if you are a first-time user and have *not* purchased a product, you can request a *temporary* user name and password from your BMC Software sales representative.

The complete PATROL documentation library is also available on the PATROL documentation CD included with major releases of the PATROL Console and Agent.

2

Installation and Migration

This chapter describes how to install the PATROL Knowledge Module for Microsoft Windows Active Directory version 1.5.00.

Requirements

Before installing PATROL KM for Active Directory, verify that your environment meets all of the requirements needed to install and operate PATROL KM for Active Directory. The following sections describe the system, license, logon, and security requirements.

System

Verify that the target computer meets the installation requirements listed in Table 2-1.

Note

PATROL KM for Active Directory only monitors Microsoft Windows 2000 Active Directory when Microsoft Windows 2000 Active Directory is running on domain controllers.

Table 2-1   Installation Requirements

Resource	Minimum Requirements
operating systems	Microsoft Windows 2000 Server Microsoft Windows 2000 Advanced Server
PATROL	3.4.00 or later
disk space needed to install	NA
disk space used after installation	25 MB

Note

The PATROL Knowledge Module for Microsoft Windows Active Directory was built to support Microsoft .NET Server 2003 Standard, Enterprise, and Datacenter Editions (32 and 64 bit). Since Microsoft .NET Server was not yet generally available at the time of the release of this Knowledge Module, please refer to the BMC Support website for a technical bulletin regarding official support for .NET after .NET Server 2003 becomes generally available.

License

Verify that you have a valid demonstration license (typically good for 30 days) or a permanent license to run your PATROL products. If you have not yet installed a permanent license, contact your BMC Software sales representative or the BMC Software Contract Administration department for licensing information.

Logon Account and Default PATROL Account

During installation of the PATROL Agent, you are asked to specify the default PATROL account. This user account is automatically assigned the rights needed to operate PATROL. BMC Software recommends that you create a unique user account for the PATROL default. If one does not already exist on your machine, see the PATROL installation guide for your operating system for instructions.

——————————————————— **Warning** ———————————————————
Do not use the administrator account to install PATROL products. Create a separate account that has the system administrator privileges. If you use the administrator account, files created by PATROL will be owned by the Administrator, and security or file access problems can result.
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PATROL Security

You can secure the data passed between PATROL components and restrict unauthorized users from accessing your data by implementing PATROL security. PATROL now contains five *security policy* levels in a predefined set of security configurations that you can select from when you install PATROL. You can install the least secure or the most secure features of PATROL, depending on your system needs and the complexity of securing your systems.

—————————————— **Note** ——————————————
Review the security level definitions in the *PATROL Security User Guide* before installing PATROL to determine the appropriate security level for your system needs. If you want to implement a new security level after having previously installed security, you must uninstall your current implementation of PATROL and reinstall it with the new security level.
————————————————————————————————————

High security requires more configuration of the communicating components (the agent, console, and console server) and is more difficult to use than lower levels of security. You can select the security level that best balances the ease of use with your need for security.

The lowest level (0) is a minimal level of security with no configuration requirements. At the highest security level (4), all communicating components must authenticate with each other and key databases must validate connection requests.

—————————————— **Note** ——————————————
All components in a system, including agents, consoles and console servers, must operate at the same level of security to communicate with each other. This requirement is ensured when you install PATROL with the lowest level of security (the default level of 0).
————————————————————————————————————

For more information about implementing and using PATROL security, see the following documentation:

- *PATROL Security User Guide*
- *PATROL Central Operator - Web Edition Online Help*
- *PATROL Central Operator - Microsoft Windows Edition Online Help*

How PATROL Security Affects KMs

PATROL Security is installed as part of the agent, console, and console server. KMs inherit the security policy from the agent and console on which they are installed.

Installation Procedures

BMC Software recommends that you install the product on a limited number of development or test machines first, configure and test the BMC product, and then install it onto production machines.

--- **Note** ---

Upon installation on a server that has PATROL KM for Domain 1.3.00, 1.4.00, or 1.4.01 already installed, the Domain KM application classes that are named *NT_AD<name>* are automatically disabled. These disabled application class names are recorded in the configuration database, **pconfig**, in the location **/AgentSetup/disabledKMs**.

Planning

The installation plan is simple and straightforward: install PATROL KM for Active Directory on domain controllers that you wish to monitor.

The installation program gives you two installation options

- install to the local computer now
- create an installable image on the local computer that you can then install on the local computer *or on other computers* at any time

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Note

For additional information about installing from the installable image, refer to the *PATROL Installation Reference Manual.*

You must install PATROL KM for Active Directory and a PATROL Agent on each machine that you want to monitor. You also must install PATROL KM for Active Directory on each machine from which you want to view results.

Note

The installation program does provide you with the ability to export the installation package after you have made all of the installation selections. If you place that installation package in a shared Directory, you can use that same installation package to install BMC Software products on all computers that share the same BMC products Directory, PATROL default login, PATROL Agent port number, PATROL 3.x and 7.x product directories, and security option.

The installation program shipped with PATROL 3.5 and PATROL 7.1 prompts you to select the roles performed by the computer onto which you are installing BMC Software products. Before beginning the installation process, review the following definitions of the roles presented in the installation program and decide which of these describes the roles that each computer in your system performs. During installation, select one or all of the following options:

- **Console Systems** (formerly referred to as console computers and client application system) host user desktop applications such as consoles, user interfaces, viewers, and browsers. Select this option if the computer to which you are installing will perform any of the following roles:

    — monitor and manage on the Web using a PATROL Central Operator - Web Edition console (PATROL 7) (Unix or Windows)

— monitor and manage on Windows using a PATROL Central Operator - Windows Edition console (PATROL 7)

— monitor, manage, and develop KMs on Unix or Windows using a PATROL Console for Unix or PATROL Console for Windows (PATROL 3)

- **Managed Systems** (formerly referred to as agent computers) host software that manages the resources on the system, such as a PATROL Agent, PATROL Knowledge Modules, and Service Reporting Retrievers. Select this option if the computer to which you are installing will perform any of the following roles:

   — host a PATROL Agent 3.4 or greater (works with both the PATROL 3.*x* and PATROL 7.1 architecture)

   — host a PATROL Central Operator - Microsoft Windows Edition (PATROL 7.1) console

   — host KMs and components that contain the knowledge PATROL uses to monitor the resources on this computer.

- **Common Services** (new with PATROL 7.1) host services that are shared among managed systems and client application systems. Each of these common services can be installed on any computer in the network. Select this option if the computer to which you are installing will perform any of the following roles:

   — host the PATROL Central Operator - Web Edition (PATROL 7.1) console

   — host the PATROL Central Operator - Microsoft Windows Edition (PATROL 7.1) console.

Choosing an Installation Option

Use one of the following options to install PATROL KM for Active Directory:

- The **Typical** installation option installs the predefined set of components (selectable entities). To install components that are not among the predefined set, see "Custom Installation Procedure" on page 2-11.

Note

BMC Software recommends that you use the Typical installation if you do not yet have a good understanding of PATROL and you are installing to a computer that does not have a prior version of PATROL.

Note

The Typical and Custom installations will automatically preload a predefined set KMs. This list is stored in the file **MWD_ACTIVE_Directory_MN.kml.**

- The **Custom** installation option installs the components and KMs that you select. Use custom if you have a good understanding of PATROL or you are installing to a machine that has a prior version of PATROL.

- If you are installing a KM to a PATROL 3.4.*x* environment that uses the PATROL KMDS, *do not use the Custom or Typical* installation options. Perform one of the following actions instead:

    — At the Windows command line prompt, from the CD Directory containing the setup executable, execute **setup.exe -kinds -kmds** *portnum* (default *portnum* is 3182).

    — At the Unix command line prompt, from the CD Directory containing the setup executable, execute **setup.sh -kmds -kmds** *portnum* (default *portnum* is 3182).

Typical Installation Procedure

To perform a Typical installation that includes PATROL KM for Active Directory, take the following actions:

1. From the installation CD, run **setup.exe** (Windows) or **setup.sh** (Unix).

2. When you see the Select Installation Option dialog box, select **I want to install products on this computer** or **I want to create an installable image to be installed later**.

3. If you selected **I want to create an installable image to be installed later**, populate the destination path where you want to save the installable image by using the Browse button or entering the path into the text box that is adjacent to the Browse button.

4. In the Select Type of Installation dialog box, select **Typical**.

5. In the Specify Installation Directory dialog box, identify your BMC Software products installation Directory.

6. When you see the Select System Roles dialog box, select **Managed System**, **Console Systems**, or **Common Services**, or some combination of these.

   - Select **Managed System** if you are installing to a computer that will host a PATROL Agent 3.4.00 or later.

   - Select **Console Systems** if you are installing to a computer that will host a PATROL Console or PATROL Central Operator - Microsoft Windows Edition console.

- Select **Common Services** if you are installing to a computer that will host a PATROL Console Server, RT Server, or PATROL Central Operator - Web Edition.

Note

For more information on these products, refer to the *PATROL Console Server User Guide*.

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7. In the Select Products and Components to Install dialog box, select the products and components that you want to install (see Figure 2-1 on page 2-10).

Figure 2-1   Select Products and Components to Install Dialog Box for Typical Installation
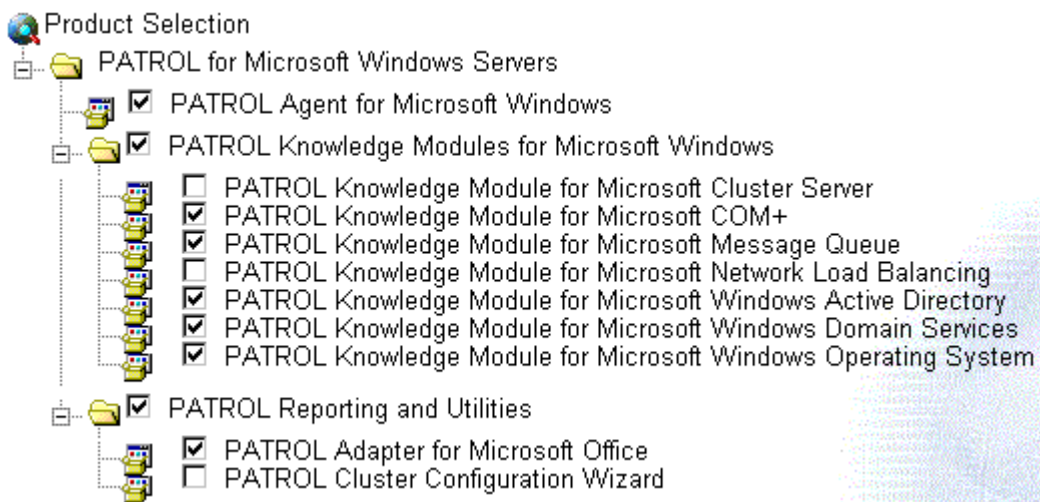
8. In the Provide Information for the PATROL Agent dialog box, indicate whether or not you want to start the PATROL Agent automatically after completing the installation (you will see this dialog only if you selected Managed System in Step 6 of this procedure).

9. Complete the remaining dialog boxes.

Custom Installation Procedure

A Custom installation is similar to the Typical installation. The differences are listed in the following table.

Table 2-2   Characteristics of Typical vs. Custom Installation

Description	Typical Installation	Custom Installation
complexity	lower	higher
automatically preload KMs	yes	yes
allows port number designation	no	yes
specify PATROL 3.x Directory location	no	yes
specify PATROL 7 Directory location	no	yes

To do a custom installation

1. From the installation CD, run **setup.exe** (Windows) or **setup.sh** (Unix).

2. When you see the Select Installation Option dialog box, select **I want to install products on this computer** or **I want to create an installable image to be installed later**.

3. If you selected **I want to create an installable image to be installed later**, populate the destination path where you want to save the installable image by using the Browse button or entering the path into the text box that is adjacent to the Browse button.

4. In the Select Type of Installation dialog box, select **Custom**.

5. In the Specify Installation Directory dialog box, identify your BMC Software products installation Directory.

6. When you see the Select System Roles dialog box, select **Managed System**, **Console Systems**, **Common Services**, or some combination of these.

- Select **Managed System** if you are installing to a computer that will host a PATROL Agent 3.5.

- Select **Console Systems** if you are installing to a computer that will host a PATROL Console or PATROL Central Operator - Microsoft Windows Edition console.

- Select **Common Services** if you are installing to a computer that will host a PATROL Console Server, RT Server, or PATROL Central Operator - Web Edition.

─────────────── **Note** ───────────────
For more information on these products, refer to the *PATROL Console Server User Guide*.

7. In the Select Products and Components to Install dialog box, select the products and components that you want to install (see Figure 2-2 on page 2-13).

8. In the Provide Information for the PATROL Agent dialog box, indicate whether or not you want to start the PATROL Agent automatically after completing the installation (you will see this dialog only if you selected **Managed System** in Step 6 of this procedure).

9. In the Provide the PATROL 3.*x* Product Directory, identify the BMC products installation Directory and the PATROL 3.x product Directory (you will see this dialog only if you selected Console Systems in Step 6 of this procedure).

Figure 2-2   Select Products and Components to Install Dialog Box for Custom Installation
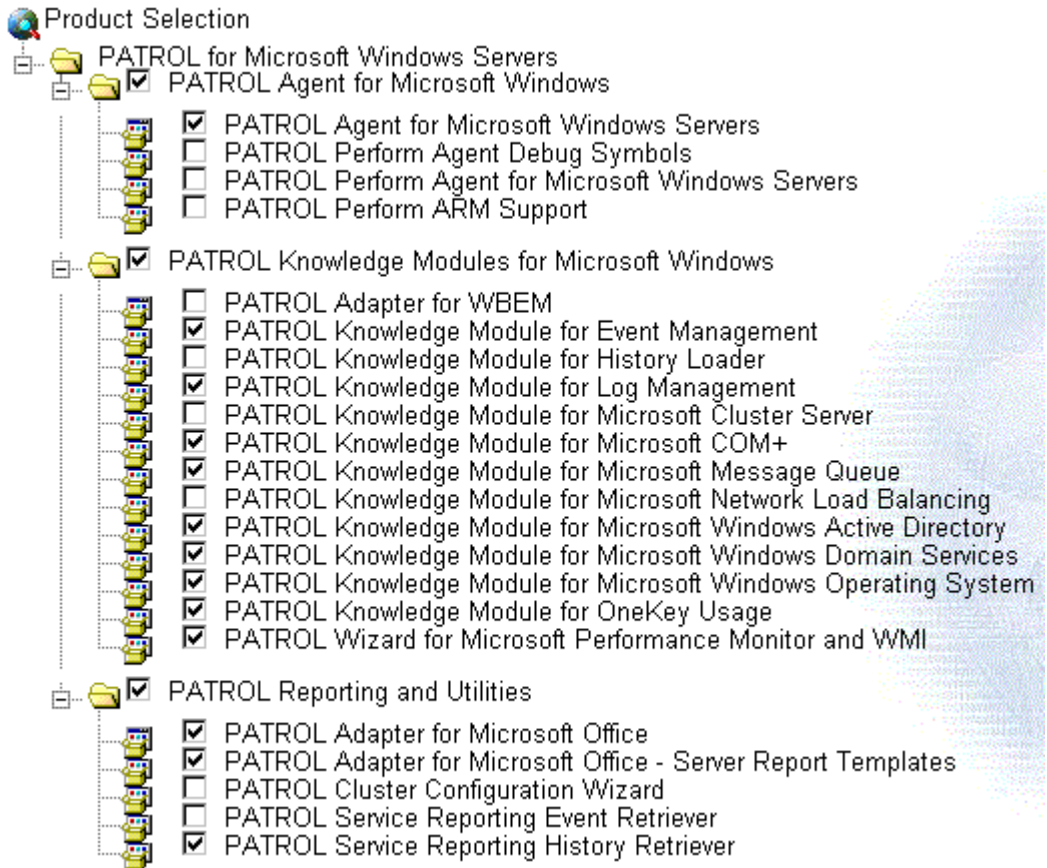
10. In the Provide the PATROL 7.*x* Product Directory, identify the BMC products installation Directory and the PATROL 7.*x* product Directory (you will see this dialog only if you selected Common Services in Step 6 of this procedure).

11. Complete the remaining dialog boxes.

— Note —

The number and contents of the dialog boxes depend on your KM selections and your inputs to the dialog boxes. Click **Help**, as needed, to complete the dialog boxes.

Migration

PATROL KM for Active Directory 1.5.00 has no migration path from versions prior to 1.5.00.

——————————— **Note** ———————————
Upon installation on a server that has the PATROL for Domain KM 1.3.00, 1.4.00, or 1.4.01already installed, the Domain KM application classes that are named *NT_AD<name>* are automatically disabled. These disabled application class names are recorded in the configuration database, **pconfig**, in the location **/AgentSetup/disabledKMs**.

Where to Go from Here

The components that you installed as part of the Typical installation are already configured to preload. The KMs that you installed individually are not configured to preload. Before you can begin using any individually installed KMs, you must load these KMs into the PATROL Console. For more information, see Chapter 3, "Loading and Configuring PATROL KM for Active Directory."

3

Loading and Configuring PATROL KM for Active Directory

This chapter describes how to load, unload, and configure the PATROL KM for Active Directory product using the PATROL Consoles.

The following topics are discussed in this chapter:

Loading and Unloading Knowledge Modules

Installing PATROL KM for Active Directory places the application files into the PATROL Directory. You can load the files into the PATROL Console so that the PATROL KM for Active Directory applications, commands, and parameters appear in the PATROL Console.

If you no longer want to use an application class that you previously loaded, you can use the unload instructions to unload the **.km** file so that its application class will no longer appear in your console.

Loading Knowledge Modules

Summary: Before you can begin using Knowledge Modules (KMs) that you have installed, you must first load them with a PATROL Console. In this section, follow the instructions that apply to your console.

Loading KMs with PATROL Central - Windows Edition

PATROL Central - Windows Edition has a Loading KMs wizard that enables you to control which KMs are loaded on which computers.

Step 1   On the **Common Tasks** tab of the taskpad, click the **Load Knowledge Modules** icon.

PATROL Central - Windows Edition displays the wizard.

Step 2   Click **Next** to start the wizard.

The wizard lists each computer on which a PATROL Agent has been installed.

Step 3   Select the check boxes for the computers on which you want to load KMs, and click **Next**.

The wizard displays a list of available .**kml** files for each computer selected in the previous step. Each .**kml** file is listed once for each computer. You can display .**km** files by changing the filter.

The KMs available in this product are listed in Table 3-1 on page 3-3.

――――――――――――――― **Note** ―――――――――――――――

Unless you are an advanced PATROL user, use the **.kml** files to load product component files. Loading individual **.km** files can break the interdependencies between the **.km** files, while loading **.kml** files preserves these dependencies.

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Table 3-1   Predefined Configuration Components (same for all consoles)

.kml file	Component
MWD_ACTIVE_Directory_MN.kml	AD_AD_SERVER.km AD_AD_ADDRESS_BOOK.km AD_AD_FSMO_ROLE_CONECTIVITY_CONT.km AD_AD_FSMO_ROLE_CONECTIVITY.km AD_AD_LDAP.km AD_AD_REPLICATION.km AD_AD_SAM.km AD_AD_COLLECTOR.km

Step 4   Select the check boxes for the KM and computer pair that you want to load.

Step 5   Click **Next** and click **Finish**.

PATROL loads the selected KMs on the selected computers.

Loading KMs with PATROL Central - Web Edition

PATROL Central - Web Edition has a Loading KMs feature that enables you to control which KMs are loaded on which computers.

Step 1   From the Monitored Systems page, click the **Load/Unload KMs** button.

The Load KMs page opens, listing each computer on which a PATROL Agent has been installed.

Step 2   Select the computers on which you want to load KMs, and click **Next**.

The Load KMs page displays a list of available .**km** and .**kml** files.

If you selected more than one computer, the only .**km** and .**kml** files that are listed are the ones that have been installed on all of the selected computers. If a particular .**km** or .**kml** file was installed only on one computer, you must choose that computer by itself to load the file.

The KMs available in this product are listed in Table 3-1 on page 3-3.

————————————————— **Note** —————————————————
Unless you are an advanced PATROL user, use the **.kml** files to load product component files. Loading individual **.km** files can break the interdependencies between the **.km** files, while loading **.kml** files preserves these dependencies.
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Step 3   Select the .**km** or .**kml** files that you want to load.

Step 4   Click **Finish**.

PATROL loads the selected KMs on the selected computers.

————————————————— **Note** —————————————————
If you want to load a .**km** or .**kml** file that was not listed in Step 2, ensure that the KM is installed on the appropriate computer and select only that computer in Step 2.
_____

Loading KMs with the PATROL Console for Windows

Step 1   From the PATROL Console for Windows menu bar, choose **File => Load KM**.

The Load KMs dialog box displays a list of available **.kml** files. The KMs available in this product are listed in Table 3-1 on page 3-3.

Note

Unless you are an advanced PATROL user, use the **.kml** files to load product component files. Loading individual **.km** files can break the interdependencies between the **.km** files, while loading **.kml** files preserves these dependencies.

Step 2   Select one or more of the **.kml** files, and click **Open**.

PATROL loads the selected KMs on all of the computers listed under PATROLMainMap.

Loading KMs with the PATROL Console for Unix

Step 1   From the PATROL Console for Unix menu bar, choose **File => Load KM**.

The Load KMs dialog box displays a list of available **.kml** files. The KMs available in this product are listed in Table 3-1 on page 3-3.

Note

Unless you are an advanced PATROL user, use the **.kml** files to load product component files. Loading individual **.km** files can break the interdependencies between the **.km** files, while loading **.kml** files preserves these dependencies.

Step 2   Select one or more of the **.kml** files and click **Open**.

PATROL loads the selected KMs on all of the computers to which your console is connected.

Unloading Knowledge Modules

Summary: If you no longer want to use an application class that you previously
loaded, you can unload the .**km** file so that its application class will no
longer appear in your console. In some consoles, unloading is referred to
as deleting. When you unload or delete a .**km** file using a console, the file
is not deleted from the **patrol\knowledge** directories on the PATROL
Console or the PATROL Agent computers.

Unloading KMs with PATROL Central - Windows Edition

PATROL Central - Windows Edition has a wizard that enables you to
unload specified .**km** files from specified computers.

Step 1   On the Common Tasks tab of the taskpad, click the **Unload Knowledge
Modules** icon.

PATROL Central - Windows Edition displays the wizard.

Step 2   Click **Next** to start the wizard.

The wizard lists each computer on which a PATROL Agent has been
installed.

Step 3   Select the check boxes for the computers from which you want to unload
.**km** files, and click **Next**.

The wizard displays a list of application class names (that correspond to
.**km** file names) for each computer selected. Each application class name
is listed once for each computer.

Step 4   Select the check boxes for the .**km** and computer pair that you want to
unload, and click **Next**.

Step 5   Click **Finish**.

The console removes the selected .**km** files from the current management
profile.

Unloading KMs with PATROL Central - Web Edition

PATROL Central - Web Edition has a feature that enables you to unload specified **.km** files from specified computers.

Step 1   From the Managed Systems page, click the **Load/Unload KMs** button.

The Load KMs page opens, listing each computer on which a PATROL Agent has been installed.

Step 2   Select the computers from which you want to unload **.km** files, and click **Next**.

The Load KMs page displays a list of **.km** files. Currently loaded **.km** files are highlighted in the list.

Step 3   Cancel the selection of the **.km** files that you want to unload.

Step 4   Click **Finish**.

The console removes the **.km** files that you specified. These **.km** files will no longer be in the current management profile.

Unloading KMs with the PATROL Console for Windows

Unloading a KM is also referred to as *deleting* a KM in the PATROL Console for Windows.

Step 1   From the **KM** tab of the tree view, right-click the application class name that you want to delete and choose **Delete** from the pop-up menu.

The console displays a dialog box that asks if you want to delete the selected application.

Step 2   Click **Yes** to delete the application class.

The application class is removed from your cache Directory and your console session file.

Step 3   Repeat Step 1 and Step 2 until you have deleted all of the application classes associated with the KM that you want to delete.

Step 4   From the console menu bar, choose **File => Save KM** to save your changes.

Unloading KMs with the PATROL Console for Unix

Unloading a KM is also referred to as *deleting* a KM in the PATROL Console for Unix.

Step 1   From the PATROL Main window, choose **Attributes => Application Classes**.

The console displays the List of Application Classes window.

Step 2   Click the name of the application class that you want to delete.

The console highlights the application class name.

Step 3   From the List of Application Classes menu bar, choose **Edit => Delete**.

The application class is removed from your cache Directory and your console session file. The PATROL Console for Unix removes the application class name from the List of Application Classes.

Step 4   Repeat Step 2 and Step 3 until you have deleted all of the application classes associated with the KM that you want to delete.

Step 5   From the List of Application Classes menu bar, choose **File => Save KM** to save your changes.

Configuring

The following section describes how to configure PATROL KM for Active Directory.

Verifying that Windows Server Objects Are Discovered

To ensure that all Windows servers and associated instances are discovered and online, verify that the Product Name application icon is displayed.

Refer to specific component online Help for a list of the Product Name component icons. See Appendix A, "Accessing Online Help."

Note

If the icons do not appear within 15 minutes of startup, open and read the information in the PATROL system output window.

Accessing KM Application Class Menus

You access KM application class menus slightly differently in each PATROL Console.

Table 3-2   Accessing KM Menu Commands

Console	Method
PATROL Console for Microsoft Windows Servers	Right-click the application icon and choose **KM Commands**.
PATROL Console for Unix	Right-click the application icon.

Table 3-2   Accessing KM Menu Commands

Console	Method
PATROL Central Operator - Windows Edition	In the navigation pane, right-click a managed system or application icon and choose **Knowledge Module Commands** from the pop-up menu.
PATROL Central Operator - Web Edition	In the tree view area, right-click a managed system, application class, or application instance, and choose **Knowledge Module Commands** from the pop-up menu.

Configuring Windows Event Log Monitoring

With the PATROL KM for Windows OS, you can monitor for specific Windows event IDs or event text. You can create event filters that specify the type of events to monitor and how to monitor them. You can create event filters by

- selecting events that you want to monitor from the event viewer
- creating a new filter that specifies the types of events that you want to monitor

---
Note

PATROL KM for Active Directory requires that the Event Log component of PATROL KM for Microsoft Windows Servers 3.8.00 is active. By default the Event Log component is inactive. Refer to the PATROL KM for Microsoft Windows Servers 3.8.00 documentation to activate the Event Log component.

» To begin configuring event log monitoring, right-click the NT_EVENTLOG application, and choose the following menu command:

- **KM Commands => Configure Windows Event Filter**

Monitoring Drive Space

PATROL KM for Active Directory monitors

- disk space used by Microsoft Windows 2000 Active Directory
- space available on the drive where Microsoft Windows 2000 Active Directory is installed

Activating Parameters

To reduce the impact on your system resources and enhance performance, parameters that are not commonly needed are turned off by default. A list of these inactive parameters is provided in the online Help. From the console menu, choose **Help => Help Topics => PATROL Knowledge Modules** => PATROL KM for Active Directory **=> Parameters => Inactive by Default.**

To activate any of these parameters, use a Developer Console and follow the instructions below:

PATROL Console for Windows

1. Find the parameter on the KM tree in the application class's **\Global\Parameters** folder.

2. Right-click the parameter, and choose **Properties** from the pop-up menu.

3. Click **Active** to check the box.

PATROL Console for Unix

1. Choose **Attributes => Application Classes** from the menu bar.

2. Select the application class, and choose **Attributes => Parameters**.

3. Select one or more parameters, and choose **Options => Activate**.

Application Classes

The PATROL KM for Active Directory application classes, see Table 3-1 on page 3-3, load automatically when PATROL KM for Active Directory starts. The **.kml** file, **MWD_ACTIVE_Directory_MN.kml**, contains the list of the KMs that will load automatically.

Table 3-3   Application Classes and Descriptions

Application Class	Description
AD_AD_SERVER	This application class represents a domain controller instance. There will be one instance per discovered domain controller. The instance is named "Active Directory Server."
AD_AD_ADDRESS_BOOK	This application class represents the address book on an active Directory server. It monitors the performance of Address Book requests made against the Active Directory server. Each instance is named "Address Book."
AD_AD_LDAP	This application class monitors the performance of LDAP requests made against the Active Directory server. The instance is named "LDAP Performance."
AD_AD_SAM	This application class monitors the performance of SAM requests made against the Active Directory server. SAM requests are generated when an NT 4.0 client of a Windows 2000 Active Directory server initiates an account change request. The instance is named "SAM Performance."
AD_AD_REPLICATION	This application class monitors the performance of Active Directory replication for the enterprise. The single instance will be named "Replication Performance."
AD_AD_FSMO_ROLE_CONNECTIVITY	Domain controllers must be able to locate and establish a LDAP connection with FSMO role holders. This application class monitors the connectivity status of each of the five FSMO role holders from this domain controller. The single instance is named "FSMO Connectivity."
AD_AD_COLLECTOR.km	This application class is the parent for all parameter collectors except FSMO. The instance is "Collectors."

A

Accessing Menu Commands, InfoBoxes, and Online Help

BMC Software offers several PATROL consoles from which you can view a PATROL Knowledge Module (KM). Because of the different environments in which these consoles run, each one uses a different method to display and access information in the KM. This appendix provides instructions for accessing the KM menu commands, InfoBoxes, and online Help on each of the PATROL consoles. See the PATROL KM for Active Directory online Help for more detailed information about navigation in the PATROL Consoles.

Accessing KM Commands and InfoBoxes

Table A-1 provides information about how to access KM commands and InfoBoxes from the various PATROL consoles.

Table A-1   Accessing KM Commands and InfoBoxes

Console	To access menu commands	To access InfoBoxes
PATROL Console for Microsoft Windows Servers	In either the **Desktop** tree tab or work area, right-click a computer or application icon and choose **KM Commands** from the pop-up menu.	In either the **Desktop** tree tab or the work area, right-click an application class or parameter icon and choose **InfoBox** from the pop-up menu.
PATROL Console for Unix	In the work area, right-click a computer or application icon to display a pop-up menu that contains KM-specific commands.	With the middle mouse button, click an application class or parameter icon.
PATROL Central Operator - Windows Edition	In the navigation pane, right-click a managed system or application icon and choose **Knowledge Module Commands** from the pop-up menu.	In the navigation pane, right-click a PATROL object and choose **InfoBox** from the pop-up menu.
PATROL Central Operator - Web Edition	In the tree view area, right-click an application icon and choose **Knowledge Module Commands** from the pop-up menu.	In the tree view area, right-click a PATROL object and choose **Infobox** from the pop-up menu.

Accessing Online Help

Table A-2 provides information about how to access Help from each console.

—————————————————— **Note** ——————————————————
If you are trying to access Help from a Unix console, see the *PATROL Installation Reference Manual* for specific instructions about installing and setting up a browser in the Unix environment.
——

Table A-2   Accessing Online Help (Part 1 of 2)

Console	To access product help	To access application class help	To access parameter help
PATROL Console for Microsoft Windows Servers	• Right-click the PATROL KM for Active Directory application icon and choose **KM Commands => Product Help**. • From the console menu bar, choose **Help => Help Topics => PATROL Knowledge Modules**.	Double-click an application class in the **KM** tab of the console. From the Application Properties dialog box, click the **Help** tab. Then click **Show Help**.	• Right-click a parameter icon and choose **Help On** from the pop-up menu. • Double-click a parameter icon; click the **?** icon or **Help** button in the parameter display window. • Double-click a parameter in the **KM** tab of the console; from the properties dialog box, click the **Help** tab; then click **Show Help**.
PATROL Console for Unix	• Right-click the PATROL KM for Active Directory application icon and choose **KM Commands => Product Help**. • From the console menu bar, choose **Help On => Knowledge Modules**.	Choose **Attributes => Application Classes** and double-click the application name. Click **Show Help** in the Application Definition dialog box.	Right-click a parameter icon and click **Help On**.

Table A-2   Accessing Online Help (Part 2 of 2)

Console	To access product help	To access application class help	To access parameter help
PATROL Central Operator - Windows Edition	From the console menu bar, choose **Help => Help Topics**. In the **Contents** tab, click the name of your product.	In the **Operator** tab of the navigation pane, select an application icon and press **F1**.	In the **Operator** tab of the navigation pane, select a parameter icon and press **F1**.
PATROL Central Operator - Web Edition	In the upper right corner of PATROL Central, click **Help** and choose **PATROL KM Help**.	In the tree view, right-click an application class and choose **Help**.	In the tree view, right-click a parameter and choose **Help**.

B

Agent Configuration Variables

This section describes the PATROL KM for Active Directory agent configuration variables that are set in the PATROL Agent. To view these variables, use BMC Software's ChangeSpring product, the wpconfig utility, or the PATROL Configuration Manager.

―――――――――――――――――― **Warning** ――――――――――――――――――

Changing any of these variables can prevent some functions from working properly and can affect your entire installation. Before you change a variable, make a record of the original setting.

Managing Configuration Variables

BMC Software recommends that you set *and* view agent configuration variables by using ChangeSpring. Using PATROL Configuration Manager or the wpconfig utility to view variable settings or deploy them to other machines is acceptable, but is not as convenient as using ChangeSpring.

— Warning —

Do not use the wpconfig utility or PATROL Configuration Manager to remove variables or add new variables. Doing so may prevent some functions from working properly and can affect your entire installation.

PATROL KM for Active Directory Configuration Variables

Table B-1 lists the PATROL KM for Active Directory variable settings.

Table B-1   Configuration Variables for PATROL KM for Active Directory (Part 1 of 2)

Variable	Description	Location	Type
SchemaMasterConnStatusSched	interval for checking LDAP connectivity to the domain controller that is the FSMO Schema Master (unit is seconds, default value is 43,200 [12 hours])	ActiveDirectory/ Configuration	integer
DomainNamingMasterConnStatusSched	interval for checking LDAP connectivity to the domain controller that is the FSMO Domain Naming Master (unit is seconds, default value is 43,200 [12 hours])	ActiveDirectory/ Configuration	integer
RelativeIDMasterConnStatusSched	interval for checking LDAP connectivity to the domain controller that is the FSMO Relative ID Master (unit is seconds, default value is 3,600 [1 hour])	ActiveDirectory/ Configuration	integer
InfrastructureMasterConnStatusSched	interval for checking LDAP connectivity to the domain controller that is the FSMO Infrastructure Master (unit is seconds, default value is 3,600 [1 hour])	ActiveDirectory/ Configuration	integer

Table B-1   Configuration Variables for PATROL KM for Active Directory (Part 2 of 2)

Variable	Description	Location	Type
PDCEmulatorConnSta tusSched	interval for checking LDAP connectivity to the domain controller that is the FSMO PDC Emulator (unit is seconds, default value is 3,600 [1 hour])	ActiveDirectory/ Configuration	integer
DisableAnnotations	enables/disables all PATROL for Active Directory parameter annotation (by default annotation is enabled—to disable annotation for all PATROL KM for Active Directory parameters, add this variable to pconfig and set the value to 1)	ActiveDirectory/ Configuration	boolean
<fully-qualified-server name>_PingTimeout Example: name.bmc.com_PingT imeout	provides a way to configure (on a per-server basis) the timeout that is used when a server is pinged for availability—servers that are connected via a slower link may need this value increased (unit is milliseconds, default is 5,000)	ActiveDirectory/ Configuration	integer
<fully-qualified-server name>_PingCount Example: name.bmc.com_Ping Count	provides a way to configure (on a per-server basis) the number of times that a server is "pinged" to test its availability—servers that are connected via a slower link may need this value increased (a server is considered available if any one ping is successful) (unit is number of pings, default is 3)	ActiveDirectory/ Configuration	integer

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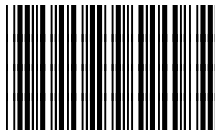
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